
Aging and cancer resistance in lymphoid progenitors are linked processes conferred by p16Ink4a and Arf.

Journal: Genes Dev

Publication Year: 2008

Authors: Robert A J Signer, Encarnacion Montecino-Rodriguez, Owen N Witte, Kenneth Dorshkind

PubMed link: 19056891

Funding Grants: CIRM Type I Comprehensive Training Program

Public Summary:

Scientific Abstract:

Lymphoid progenitors exhibit severe growth defects during aging while myelopoiesis is relatively unperturbed. These effects are due in part to the preferential expression of p16(Ink4a) and Arf in aged lymphoid progenitors. Their increased expression contributes to reduced growth and survival of lymphoid progenitors and makes them refractory to malignant transformation. Down-regulation of p16(Ink4a) and Arf in aged lymphoid progenitors reverted the senescent phenotype and restored susceptibility to transformation. These data provide a molecular explanation for the preferential effects of aging on lymphopoiesis, suggest that inhibiting p16(Ink4a) and Arf expression can rejuvenate B lymphopoiesis, and link aging and cancer resistance.

Source URL: <https://www.cirm.ca.gov/about-cirm/publications/aging-and-cancer-resistance-lymphoid-progenitors-are-linked-processes>